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A. Kell McInnis III

Comments

This issue of the Louisiana Conservationist heralds spring time...another renewal of nature's ceaseless cycle of life. It is an appropriate time to reflect on the success of a few of the department's efforts to insure and enhance the renewal and continuation of some of our precious natural resources.

The black drum, beset with intensive fishing pressure in recent years, has been protected by a resource management plan that significantly restricts commercial and recreational harvest. In the freshwater arena, we are preparing to implement a statewide Bass Management Program to insure both quality fishing opportunities and enhanced trophy fishing potential for present and future generations of anglers.

In addition, the department has several other fishery management plans under preparation. In the coming months, for instance, a mullet plan will be released.

Although the department manages fish species primarily by controlling commercial and recreational harvest rates, game birds and animals are responsive to more intensive management. Not only are harvest limits established according to a professionally established biological guideline, but habitat is also manipulated to provide optimum conditions for a diversity of wildlife species.

A new educational program called Project WILD is being implemented in our public schools to carry the conservation message to our children. At the same time, it is essential that those of us in the "older generation" understand and accept the importance of professional resource management.

Our world is simply not the same as it was two and three decades ago. More and more of us are utilizing our natural resources, both commercially and for recreation. At the same time, the habitat which sustains those resources continues to shrink.

The department is mandated by law "To protect, conserve and replenish the natural resources of the state, the wildlife of the state, including all aquatic life..." To succeed, we must have the support and cooperation of the people.

Working together, we can assure future generations the opportunity to enjoy the cornucopia of hunting, fishing and other forms of outdoor recreation that Louisiana provides today.

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Louisiana
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Courtesy of the National Wildlife Federation.

Photo by Charles Frank

Queen Bess, a small island in Barataria Bay north of Grand Isle, has provided a major stage setting for scenes in the history of Louisiana's brown pelicans. The plot has featured abundance, dramatic declines, apparent recovery and the specter of additional threats looming on the horizon.

SAVING Queen Bess

By Richard Martin and Charles W. Frank

The history of brown pelicans in Louisiana has been one of abundance, dramatic declines, apparent recovery and the specter of additional threats looming on the horizon. If a Hollywood script writer decided to create a dramatic play portraying the story of Louisiana pelicans, it would read something like this.

ACT I

As this act opens, pelicans soar gracefully over the tops of gentle rolling surf and forage in their dramatic fashion of plunging from the air into clear coastal waters. In the distance, large colonies of young, noisy pelicans exercise their wings in anticipation of joining their parents in flight.

One of these colonies is on Queen Bess Island, a small island in Barataria Bay north of Grand Isle. Queen Bess is comprised of shell ridges and pockets of low marsh. In addition to the pelicans, which nest on the highest portions of the island, numerous other bird species nest on the island, including laughing gulls, Sandwich terns, American oystercatchers and great egrets.

This act closes in the early 1900s, when an estimated 50,000 brown pelicans called coastal Louisiana their home.

ACT II

As the curtain rises, we are struck with the depressing sight of countless dead fish and waterbirds, including our own brown pelican. It is now the late 1950s, and it has become painfully obvious that something is terribly wrong with pelicans in Louisiana. Many adults are found dead near historic nesting areas and the number of nesting pelicans has declined precipitously.

In 1961, the last known nesting of native brown pelicans in Louisiana was recorded from North Island in the Chandeleur Island chain. The decline was so dramatic that by the mid-1960s, no brown pelicans can be found anywhere in Louisiana. A once abundant species had been completely eliminated in a few short years, and Louisianans now hold the dubious distinction of being the only residents in the U.S. to have witnessed the extirpation of their state bird.

Although the factors that led to the demise of pelicans in Louisiana are not fully known, all evidence points to pesticide contamination. Unfortunately, pelicans were not the only animals to suffer from pesticide poisoning; other fish-eating birds, such as the bald eagle, also declined at an alarming rate. In addition, many extremely large fish kills along the Louisiana coast were also noted at this time; one fish kill in 1963 involved an estimated five million fish.

It soon becomes clear that chlorinated hydrocarbon pesticides, such as DDT and endrin, possess the damaging attribute of accumulating in the fatty tissues of animals. These stored pesticides are passed from prey to predator up the food chain, accumulating at higher concentrations at each level; this phenomenon is known as bioaccumulation. In birds, these pesticides cause direct mortality, alter behavior and cause birds to produce eggs with abnormally thin shells that crack under the weight of incubating adults.

Although pesticides are valuable tools in many circumstances, some produce unacceptable environmental damage if used improperly. It is the effects of uncontrolled pesticide applications to wildlife that leads Rachael Carson to write her monumental book "Silent Spring," which gives rise to the modern environmental movement.

ACT III

The opening scenes of this act depict the efforts of dedicated scientists and concerned private citizens to eliminate many of our worst environmental problems and initiate actions to save countless endangered species. Pesticides, such as DDT and endrin, are banned; air and water quality legislation is enacted; and wildlife restoration projects are initiated.

The Louisiana Department of Wildlife and Fisheries is successful in reintroducing nesting pelicans to North Island and Queen Bess Island by the late 1970s. Biologists from the Louisiana department and the Florida Game and Freshwater Fish Commission collected nestling pelicans from large colonies in Florida. These were hand carried to Louisiana and released at carefully selected sites.

The young pelicans were closely guarded and fed two times a day by Department of Wildlife and Fisheries personnel until they fledged. Those youngsters were now "imprinted" on the islands and would return as adults in two to three years to begin nesting. Some nestlings from the newly-established Queen Bess colony were then used in a subsequent reintroduction program on Last

The shell ridges of Queen Bess Island today provide nesting sites for almost 300 pair of brown pelicans, as well as numerous other bird species.

Photo by Charles Frank

Island, in the Isles Dernieres chain. (These programs are described in detail in the July/August 1984 Louisiana Conservationist.)

As this act closes, a couple of thousand brown pelicans again nest off the Louisiana coast, and flocks are again a common sight for visitors to such places as Grand Isle. Although the pelican's future seems secure, by the mid-1980s the loss of coastal wetlands becomes a regular topic of discussion, foreshadowing things to come.

ACT IV

The pelican colony on Queen Bess Island now takes center stage. The reintroduction program was a rousing success, and nearly 1,500 pairs of brown pelicans nested on this island in the mid-1980s. However, the combination of subsidence and erosion gradually reduced the amount of available nesting habitat on the island to only a couple of acres. This is one example among many of the coastal wetland loss problem.

It is estimated that 40 to 60 square miles of coastal wetland habitat in Louisiana are lost each year. Given that Louisiana supports about 40 percent of all coastal wetlands in the U.S., this is an environmental problem of both state and national concern. This loss is due to many factors including natural subsidence, erosion, saltwater intrusion and coastal development. Natural subsidence was historically countered by deposits of soil that were regularly left by the natural flood waters of the Mississippi River. Construction of levees along the river protected people and their property, but also channeled important sediments and freshwater deep into the Gulf of Mexico.

In the early 1980s, several people within the Department of Wildlife and Fisheries expressed proposals to stem the loss of Queen Bess and ultimately rebuild the island, which, at that time, supported the largest brown pelican colony in the northern Gulf of Mexico. Unfortunately, concern about the effects of a restoration project to the adjacent oyster beds and a lack of money to implement the restoration effort put the plans on hold.

The area surrounding Queen Bess Island was historically a productive oyster field that had been cultivated by many generations of oystermen. In fact, the island itself is an exposed oyster reef and depended on a constant supply of oyster shell to compensate for natural subsidence. Unfortunately, environmental changes, particularly an increase in salinity and predator abundance, greatly reduced the productivity of the surrounding beds and limited the supply of the surplus shell necessary to maintain the island.

Because of low productivity of the oyster beds and the plans to someday protect and improve the pelican nesting habitat on Queen Bess, the Department of Wildlife and Fisheries initiated a program of not renewing oyster leases in the vicinity of the island to allow for future restoration projects.

As Queen Bess slowly erodes and sinks, those pelicans that do find a place to nest are faced with the added problems of severe winter storms. It is not uncommon for all the eggs and young of the colony to be destroyed by flood waters or severe cold weather. If the loss occurs early in the nesting cycle, the pelicans will attempt to renest. In the past couple of years, fewer than 500 pairs of pelicans have successfully nested on Queen Bess; during the 1989-90 nesting season, it took three nesting attempts before the 342 pairs were successful in rearing young.

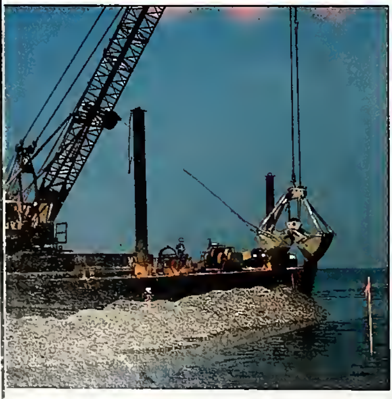
Several years of poor pelican productivity in the mid- and late-1980s renews interest in restoring Queen Bess and improving pelican nesting habitat. The plight of Queen Bess pelicans receives wide publicity, and many people call for action. The Louisiana Legislature expressed its concern by passing Senate Concurrent Resolution No. 101, sponsored by Sen. F.E. "Hank" Lauricella and Reps. Bruce Bolin and Frank Patti. It directs the Department of Wildlife and Fisheries to coordinate an effort to restore the island and enhance pelican nesting habitat.

In June 1989, the Department of Wildlife and Fisheries, Department of Natural Resources, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and consultants from Environmental Professionals Limited initiate a long series of discussions on the Queen Bess problem and develop a strategy for solving the problem. Several plans are considered before settling on one that utilizes spoil dredged from the Barataria Waterway during routine maintenance dredging.

Concerns about the damaging effects of dredge spoil on wetland habitats, water quality and wildlife resources often make the disposal of dredge spoil difficult. The plan for restoring Queen Bess will turn what is essentially a waste product into a valuable resource.

The restoration plan calls for building a shell dike west of the remnant island and

As Queen Bess is subjected to erosion and subsidence, pelicans find it increasingly hard to find nesting spots. The pelicans below are attempting to nest in a low area of the island susceptible to flooding. At bottom, as part of a strategy to solve the problems facing Queen Bess, a shell dike is constructed to contain dredged spoil and create an impoundment.



Photos by Richard Martin

pumping dredged spoil into the impoundment. Most of the suspended sediments will settle in the impoundment, and the effluent will then flow through the marsh in the center of the island, depositing most of the remaining sediments, before exiting on the east side of the island. The impoundment will eventually become salt marsh, and the existing marsh in the center of the island will benefit from the addition of sediments.

Although the final plan appeared to be a workable one, several obstacles remained, not the least of which was finding the money to pay the estimated $550,000 project cost. After many months of negotiations, the Corps of Engineers agreed to provide $400,000 from a special fund for wetland creation, and the State of Louisiana will cover the remainder of the costs. U.S. Rep. Lindy Boggs was instrumental in ensuring that federal funds were available for this project. State money will come from a General Fund appropriation and from the newly created Wetlands Conservation and Restoration Fund, which was enacted by Louisiana voters in 1989.

Before the restoration project could begin, there was one more hurdle to clear; the holders of oyster leases for beds adjacent to Queen Bess had to agree to exempt state and federal agencies from any responsibility should the project damage any remaining oyster beds. By early September, officials had the signed release forms in hand and were finally ready to begin construction. However, because the pelicans are due to return and begin nesting in early November, the project faces severe time restrictions.

Great Lakes Dredge & Dock Co. received the contract for the restoration project, and in the early morning hours of Sept. 4, construction begins. Workers plunge into the cool waters of Barataria Bay near Queen Bess and lay down a layer of nylon mesh that will serve as a base for the shell dike that will create the impoundment. During these initial activities, the pelicans that use the island as a resting site watch from a safe distance, unaware of the major changes that will take place in the near future.

The internal clock in the Queen Bess pelicans works properly, and the birds began constructing their nests Nov. 1. Of course, everyone is glad to see the return of the pelicans, which establish small colonies on both ends of the island, but there is concern that activities associated with the pumping will cause the birds to abandon their nests. However, because successful completion of this project will provide substantial long-term benefits to pelicans, it is decided to accept the risk.

After the difficult procedure of laying 6,000 feet of pipe, dredging begins Nov. 12. The next day, it becomes obvious that not only are the nesting pelicans not disturbed by the pumping, but they actually benefit; pelicans eagerly feed on countless fish, primarily ribbonfish, discharged with the spoil slurry.

Pumping continues for five days, until the impoundment fills with the spoil slurry. The pipes are then carefully removed, and the dredge continues on to other segments of the waterway. By this time, nearly 300 pelican pairs are nesting, and others will undoubtedly begin nest construction in the near future.

EPILOGUE

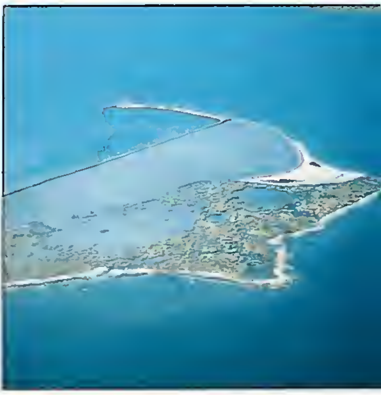
The final act of this natural history story remains to be written, but the outline has been drafted. Once the spoil settles in the impoundment, the Habitat Conservation Division of the Department of Wildlife and Fisheries will oversee management of the island and the nesting pelicans.

To stabilize the island, various species of shrubs will be planted on the higher sites and hardy marsh grasses will be planted in the lower areas. In addition, shell will be deposited on a few acres of the island to raise the elevation of the pelican nesting area, keeping the nests above flood tides. Other management strategies being considered include the placement of nesting platforms, similar to those at Avery Island.

Hopefully, as the final curtain falls on this play, several thousand pelicans will again be nesting on Queen Bess Island. Adults and children alike will continue to share the thrill of watching pelicans soar gracefully over Louisiana's coastal waters well into the next century.

History will note that although human actions led to local extinction of numerous species in Louisiana and contributed significantly to the loss of coastal wetlands, the cooperation of numerous state and federal agencies, private industry, conservation organizations and concerned private citizens reversed some of the environmental damage and worked toward the restoration of endangered species, among them our state bird, the brown pelican. □

The Queen Bess restoration project was a combined effort by the Department of Wildlife and Fisheries and other state and federal agencies. Below, a suction dredge removes spoil from Barataria Waterway and pumps it to Queen Bess. At bottom is an aerial view of Queen Bess after the restoration project was completed in late November of last year.



Photos by Richard Martin

TRIGS
AT THE
RIGS

BY HUMBERTO FONTOVA

Underwater a human scream appears as a cloud of bubbles. Judging from the size of this cloud, Tom must really be howling. It's Tom's first rig dive. He's just nailed a nice snapper with his spanking new speargun and is swimming over to show me when they attack.

With eyes twirling crazily and fangs nipping and slashing, they surround him. Now Tom looks like he's waving at me. No...wait. He's not waving. Looks more like a hand that's felt a hot stove or a poorly placed hammer blow...or a triggerfish's teeth.

Now Tom's swatting wildly with his speargun while a dozen triggers dart around him. Most are after the snapper on his speargun shaft. But they've got that look in their eye; their movements are jerky, erratic. They're slashing at everything around them. Yes, folks it's a full-fledged triggerfish feeding-frenzy and Tom's right in the middle of it.

Oh, oh...now Tom's tugging frantically at his earlobe while bigger and bigger clouds of bubbles gush from his regulator. His eyes seem to be bulging inside his mask. Every rig diver knows about triggerfish's taste for earlobes. Didn't I warn him about triggerfish? No, come to think of it, I sure didn't.

By now the snapper is down to a few shreds of flesh and a head. But I think all that snack did was trigger their appetite. They'll have to satisfy it somehow. It might take a little longer, but Tom could end up like that snapper. They've already started on his ears.

I better swim over. Now I remember. I'd meant to warn Tom about these triggerfish.

But on the boat ride out, all he kept asking about were sharks and barracuda, and I guess I forgot to warn him about the only REALLY vicious fish in these waters. But now he knows.

And he learned the same way I did. Anyone who knows any will tell you that Louisiana rig divers are a jocose bunch with a highly cultivated sense of humor. Such things as watching a novice rig diver (especially one they enticed into his first rig dive) with eyes bulging inside his mask, with bubbles pouring out of his regulator in great billows, swatting and flailing his way out of a triggerfish feeding frenzy, tickles them to no end. Dive-club meetings for generations to come will rock with hilarity at the telling and retelling of such episodes. Yeah, these guys are a barrel of laughs.

Scuba divers are among the very few people in Louisiana familiar with the triggerfish. Familiar with his temperament, with his teeth and with the luscious, snow-white meat under that homely exterior. And considering what's happening to our traditional offshore favorites, it's high time we let others in on our secret.

With snapper, croaker and white trout thinning out under the rigs lately, many offshore fishermen are switching to lighter tackle and trolling or plugging for big-game species. But others seem convinced that cranking up a half-pound sinker, on a cable leader attached to 80-pound test, from 200 feet down, on a broomstick of a rod and winch of a reel—all for an occasional one or two pound white trout or red snapper—is the only way to fill a box with "eatin' fish" at the rigs.

Maybe you've grown weary of this ponderous exercise? Maybe you're wondering if there is an easier way? Maybe you're wondering what your bait is passing through on it's 100 or 200 foot trip to bottom of the Gulf? Scuba divers know: schools of fish that equal—in spirit of fight and quality of flesh—anything found on the bottom.

These mid-depths around the oil platforms literally swarm with triggerfish (gray triggerfish, to be precise). And on light to medium spinning tackle these fish offer the kind of reel-screaming excitement not normally associated with rig fishing.

Charter skippers in Florida were amazed when told that in Louisiana most triggerfish caught by bottom fishermen are usually chucked back into the Gulf. "Send them over here," replied Captain Bill Ming of Destin Marina. Captain Ming sang the praises of triggerfish as a food fish and reported that its popularity in that region is such that a new "triggerfish hook" has been devised.

Basically it's a small, thick, short-shanked hook designed for the triggerfish's small mouth and designed to stay sharp after being gnawed on by their teeth, Ming said.

When asked about the best bait for triggerfish, "ANYTHING!" came the abrupt response. "Squid, cut fish of any type. They'll bite on anything but it's best to use something tough that will stay on the hook while he nips at it."

Off the Louisiana coast triggerfish are found at those rigs starting at about 40 foot depths on out to those in several hundred feet of water. They're a strictly saltwater fish with no tolerance for brackish water and no migration into the marshes.

Triggerfish favor the mid-depths around the rigs, so forget the broomstick of a pole and winch of a reel and get out the light to medium tackle. Put on a leader, a small sturdy hook tipped with cut fish or squid. (The hardtail jacks that school around the rigs make excellent triggerfish bait. Cut out a chunk with the skin on and hook it through the skin. This will help keep it on the hook even after several chomps.) And drop it down 20 or 30 feet close to the structure.

The triggerfish is a homely cuss, best known in Louisiana to scuba divers because of its belligerent attitude. Most anglers who hook one wind up by throwing it back. But it makes a good sporting fish and is good eating, too.

Triggerfish are nibblers more than strikers, so stay alert to the slightest tapping on the line. When he takes it for good, strike back hard to set the hook in its bony tooth-studded mouth and prepare yourself. This little bulldog of a fish, even at two or three pounds, has bursts of energy and a dogged, yanking fight to shame any white trout or snapper.

Pull a red snapper out of the gulf: that perfect profile, that pretty pink sheen—your mouth starts watering almost immediately. This probably won't happen with a triggerfish. In fact, I've seen females shriek in horror at finding one on the end of their line. "Yuck!

What is that?! Get it OFF!"

But if beauty is only skin deep, the same holds for homeliness. Dig below that hide with a fillet knife and you're in for a treat, my friend. Anyone who has tasted triggerfish cannot deny that this fish is in league with the red snapper and grouper as gourmet fare and shames the white trout that crowd him out of offshore fishermen's ice chests in Louisiana.

I think I hear scoffing: "Man, those triggerfish are a pain to clean. Me, I don't fool with em. I throw 'em back."

Interesting. The same people who think nothing of poking, peeling and pinching their way for four hours through 15 pounds of crab and crawfish shells for about six ounces of meat, then stuff the meat back into the darn shells to serve, complain about a triggerfish being hard to clean.

If you can fillet a redfish, you can learn to fillet a triggerfish. And the meat on a triggerfish is twice as good as on any redfish. I've conducted taste tests on dozens of volunteers to confirm what my own taste buds told me.

Start with a sharp boning knife or sturdy-bladed fillet knife. Stick it in right alongside the dorsal fin (the skin is softest here). Move it up against the grain of the scales toward the head, then follow the bones down to the rib cage and back to the tail.

With the skin left on, these fillets are great on the grill. Simply place on a grill skin side down. Baste with lemon butter, and scoop the meat out when it turns white. Moaning, yumming and rolling of eyes are optional, but usually follow.

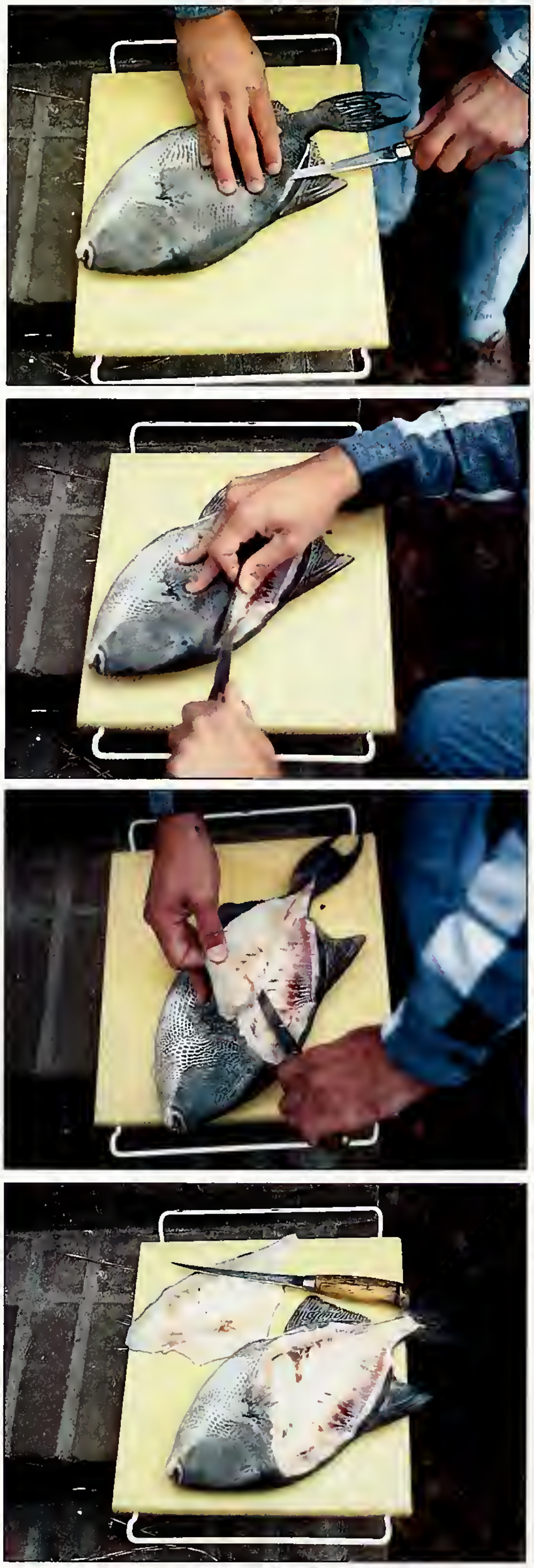
Triggerfish fillets are firm enough to grill without the skin if you prefer, or broil, or fry, or blacken. Basically, anything you did with redfish or snapper is as good, or better, with triggerfish.

The triggerfish's gourmet status is well established in Florida. Along the Panhandle charter boats crowd each other above reefs where the schools are found, and restaurants bill him proudly as "fish of the day."

Last summer I was surprised to learn where many of the triggerfish served in these restaurants come from. Striking up a conversation with a commercial fishing captain in the act of unloading tubs of triggerfish, I remarked that in my home state, so sophisticated are our palates, so discriminating are our tastes, that he'd have to sell those triggerfish as fertilizer.

"Fine with me," he snapped. "Where do you think we caught these fish? We've spent the last week at your offshore platforms!" □

Restaurants in Florida feature the triggerfish on their menus, and author claims it tastes twice as good as redfish.



Here, starting at top, is the correct technique for filleting the trigger. Slip a sharp knife in right alongside the dorsal fin. Move it up against the grain of the scales toward the head, then follow the bones down to the rib cage and back to the tail. Fillets may be grilled with or without the skin, and broiled, fried or blackened as well.

aquatic EDUCATION

Teaching a Lifetime Sport

BY PAUL JACKSON AND A. M. CARVER

Fishing is one of America's favorite outdoor activities. Most older anglers learned the sport as children. But today's young people have their attention pulled in so many directions that many are never exposed to fishing. The Louisiana Department of Wildlife and Fisheries has developed its Aquatic Education Program to give youngsters, as well as adults, the opportunity to enjoy the sport of fishing.

Do you enjoy fishing? A large number of individuals in this country do. The National Survey of Fishing, Hunting, and Wildlife Associated Recreation reveals these facts about the sport of fishing:

Of the U.S. population ages 6 and older, 58,599,000 go fishing.

Sport fishermen, ages 16 and older, spend $28 billion a year to fish.

Sport fishermen, ages 16 and older, spend 977 million days fishing on 870 million trips a year.

According to the Gallup Poll, sport fishing is the single most popular leisure activity among men and ranks fifth among women.

Approximately 65 percent of all fishermen live in urban areas and 35 percent live in rural America.

Fishing is one of America's favorite outdoor sports. Few states in this country offer the variety of fishing opportunities that Lou-

isiana boasts. Louisiana has 2,907,364 acres of lakes, reservoirs and ponds; 3,576,320 acres of marshes; 40,300 miles of rivers, bayous and streams.

Where else can one go and enjoy bass fishing on one of the largest manmade reservoirs in the South, fish for bream or crappie in the beautiful Atchafalaya Basin, float-fish for spotted bass in clear streams, pursue redfish in coastal marshes, fish for speckled trout in coastal estuaries, or go to the Gulf of Mexico for mackerel, tarpon or red snapper?

Most anglers learned the sport as children. Many of today's anglers remember spending a morning on a misty lake or pond with their father or grandfather. In many a young person a sense of appreciation and responsibility for stewardship was acquired during these outings.

The youth of our nation today have many interests. Urban and rural communitities center many of their activities around team sports. With all the activities available to youngsters today, many are never exposed to fishing. The Louisiana Department of Wildlife and Fisheries has developed its Aquatic Education Program to give youngsters, as well as adults, the opportunity to enjoy the sport of fishing.

What is Aquatic Education? Aquatic Education is an educational program that was developed to acquaint the public with the sport of fishing. The program focuses on two methods of introducing today's youngsters and adults to fishing. One method is through the public school systems. The school program is being piloted and evaluated in several school systems across the state. This aspect of the aquatic program acquaints the middle school children with the sport of fishing and imparts a knowledge of Louisiana's aquatic communities.

In an effort to enhance the knowledge of high school students in regard to our aquatic environment, the Department of Wildlife and Fisheries has incorporated Louisiana Sea Grants' WILD Louisiana into its aquatic program. This program is a series of educational activities for use in high school environmental science classes. WILD Louisiana combines both print and video to teach important environmental concepts. The activities are modeled after Project WILD, an interdisciplinary environmental and conservation education program emphasizing wildlife. Though its topics are specific to Louisiana and the Gulf of Mexico region, WILD Louisiana illustrates universal environmental issues that are important nationwide. The following subject areas are covered in WILD Louisiana.

- "Vanishing Wetlands" discusses the causes and effects of coastal land loss and presents possible solutions.
- "Redfish: A Culinate Controversy" describes the problems surrounding the harvest of the redfish (red drum), one of Louisiana's most popular game fish.
- "Gata Data" presents the return of the alligator from endangered species to an abundant and carefully managed coastal wildlife resource.

The department does not have the staff to teach this program in the schools. The materials are made available to educators through Aquatic Education workshops conducted by the department. Schools that may be interested in the aquatic program should contact the Department of Wildlife and Fisheries education coordinator in their area for more information.

In addition to the school program currently in use, the department is interested in working with schools that have adaptive physical education or any structured handicapped programs. Experience has shown that fishing is an activity that handicapped students and adults can enjoy. The department conducts workshops for teachers and aids working with the handicapped. The workshops explain what has been done in the past, offer ideas on activities for the students, demonstrate the use of equipment available from the department, and offer ideas on how to prepare the students for a fishing outing.

The other method of instruction used by the department is the fishing clinic program. Fishing clinics are excellent methods of teaching youngsters the basics of fishing. You don't have to have water to have an effective fishing clinic. In fact, when you have a clinic on the water, it is sometimes difficult to provide any instruction. Kids don't always want to listen under those circumstances, they just want to fish. When conducting a fishing clinic off water, people come to learn, not to fish. Fishing clinics can be taught in parking lots, schools, playgrounds or churches.

Fishing clinics co-sponsored by the Louisiana Department of Wildlife and Fisheries with other organizations are taught by volunteers. In most cases, the volunteers who conduct the clinics are obtained from the organization's wishing to co-sponsor a clinic. These volunteers receive training from the Department of Wildlife and Fisheries. The training sessions require only one evening of instruction. During these training sessions, volunteers are instructed in the educational aspect of the clinic and are acquainted with the materials that the LDWF will provide.

A typical fishing clinic would start with registration around 8:30 a.m. At 9 a.m. the clinic would begin with educational classes. These classes could include knot tying, casting lessons, fish identification, lure demonstrations, and boating safety or ethics. In addition to the volunteer training, the LDWF tries to provide each clinic with printed material for the participants, a limited number of rods and reels, hooks, corks, sinkers and publicity material. Some organizations have included a drug prevention program conducted by their local police or sheriff's department.

The department's Aquatic Education Program is designed to aquaint young people and adults with fishing. It does this through programs in the public school systems, and with informative and enjoyable hands-on activities such as outdoor fishing clinics.

An excellent time of the year to conduct a fishing clinic is during the first week of June. This year, June 3-9 is National Fishing Week. In conjunction with National Fishing Week, June 8-9 have been declared Free Fishing Days in Louisiana. During these two days, anyone in the state, resident or non-resident, may enjoy sport fishing without purchasing a license. A fishing clinic conducted during National Fishing Week would encourage individuals that may never have become interested in fishing to give it a try without purchasing a license.

Any organization wishing to become involved with the Department of Wildlife and Fisheries Aquatic Education Program may contact any of the following Regional Education Coordinators with the department's Information and Education Division.

A.M. Carver
P.O. Box 915
Minden, LA 71055
(318) 371-3050

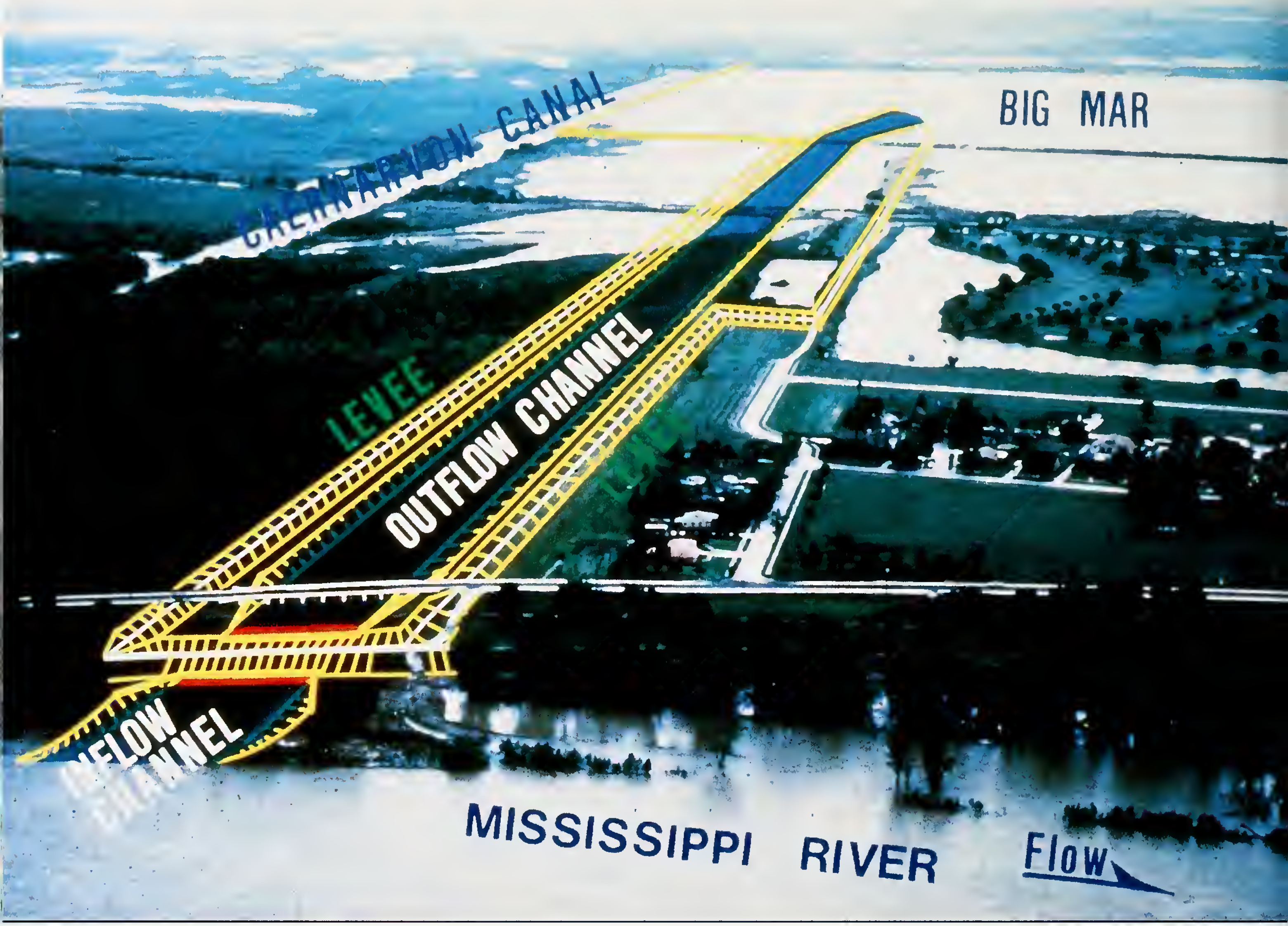
Robert Johnson
P.O . Box 278
Tioga, LA 71477
(318) 487-5885

Bob Penley
P.O. Box 98000
Baton Rouge , LA 70898
(504) 765-2930

Bill Breed
P.O. Box 4004
Monroe , LA 71211
(318) 343-4044

Kenneth Hebert
1213 N. Lakeshore Dr.
Lake Charles, LA 70601
(318) 491-2183

Jerry McLain
400 Royal St.
New Orleans, LA 70130
(504) 568-5612



Louisiana's invaluable coastal marsh is rapidly disappearing... a victim of our sometimes ill-advised attempts to control the forces of nature. Serious efforts are now underway to preserve and restore what we have endangered.

Freshwater Diversion:
HOPE FOR OUR COAST

BY GREGORY S. LAICHE

By now most Louisiana residents know of the plight facing our coast. The fact that we are losing nearly 35 square miles of coastal marsh per year has been well documented. What some may not realize is that along with the loss of these wetlands there is a corresponding loss of our renewable natural resources. We're not just losing land, we're losing furbearers, waterfowl and seafood.

The loss of our coast actually began several centuries ago when the first levees were constructed to protect the young settlement of New Orleans from the annual floods of the Mississippi River. Prior to the first levees, each spring the river would rise due to snow melt and rainfall, overflow its natural banks, and flood the marshes and shallow coastal waters with its nutrient and sediment-rich freshwater. The entire Louisiana coast was formed as a result of this process.

Through geologic history, the Mississippi River has changed course several times, building land as it migrated. Today levees flank the river from Illinois to near its mouth, preventing any migration and also preventing the annual influx of freshwater nutrients and sediments. Now this nutrient and sediment-rich water is deposited in the deep open waters of the Gulf of Mexico.

Without this influx of freshwater to dilute saltwater from the Gulf, the salinity or salt content is increasing in areas that were once fresh and brackish marshes. The vegetation in these areas cannot tolerate this prolonged exposure to saltwater and soon dies. This leaves the land, once held together by the root systems of this vegetation, at the mercy of wave and tidal action. Before long, these forces have eroded vast amounts of once thriving marsh. In addition, channelization and canal construction in these areas have only compounded the problem.

Coastal wetlands are the prime habitat of numerous waterfowl, furbearers and alligators, not to mention the abundant fishery resources. The loss of this habitat due to saltwater intrusion results in a decrease in the population size of these species. Also, the fishery resources themselves are primarily affected by changes in salinity. Salinity, more than any other factor, determines the abundance and distribution of marine organisms. Without the annual spring floods, the coastal marshes are almost totally dependent on rainfall for freshwater input. The difference in good and bad years in fisheries production is reflected in the year to year variability in freshwater input.

Methods to stop or at least slow down this saltwater intrusion have been debated for decades. The most feasible solution to this problem is the diversion of freshwater from the Mississippi River into the coastal marshes in a attempt to imitate the natural spring floods.

The U.S. Army Corps of Engineers (USACE) has developed plans for controlled freshwater diversion structures at three sites along the Mississippi River in southeast Louisiana. The key word here is controlled. The amount of freshwater flowing through these structures will be regulated by opening and closing a series of gates. The Caernarvon Diversion Structure was the first of these to be constructed and will divert water into the marshes of Breton Sound. A second structure planned for Bonnet Carre would divert water through Lakes Pontchartrain and Borgne to Mississippi and Chandeleur sounds, while the Davis Pond structure on the west bank of the Mississippi River will divert water through Lake Salvador into the Barataria Bay system.

In the spring of 1988 construction began on the Caernarvon structure and was completed in the fall of 1990. Water begins flowing through this structure in the spring of 1991. The total cost of this structure was in the neighborhood of $26 million. A tidy sum at first glance, but when you consider the benefits the project will produce, it is well worth it. The federal government picked up 75 percent of the cost with the state of Louisiana providing the remaining 25 percent. The structure consists of four 15-foot by 15-foot gates which can be opened and closed. The amount of water flowing through the structure can be regulated from zero to a maximum flow rate of 9,000 cubic feet per second.

"The success or failure of this program will go a long way in determining, not only other diversion structures, but more importantly the future of our state's wetlands."
— Gregory Laiche

Beginning in 1984, Department of Wildlife and Fisheries biologists have met with members of parish, state and federal agencies, along with commercial fishermen, sportsmen and environmental groups, to develop a comprehensive program to monitor the biology, hydrology, sediment and water quality of the Breton Sound Basin. Since the department already has monitoring programs in place, it was the logical choice to perform the biological monitoring phase of the program.

The biological monitoring program is being carried out in three phases: a three-year preconstruction phase; a four-year postconstruction phase; and a long-term phase scheduled to continue for 46 years.

During the preconstruction phase, the distribution and abundance of marsh vegetation and populations of waterfowl, furbearers, alligators, finfish and shellfish were determined. Data collected in this phase will be compared with data from the postconstruction phase in order to assess the effects and help guide the project operation. The postconstruction phase will employ sampling designs identical to that of the preconstruction phase to evaluate the immediate and short-term effects of the diversion on the wetlands resources.

The biological monitoring program is a cooperative effort among various divisions within the department. The Fisheries Research Division is responsible for monitoring the impact on the fisheries resources. The

The overall objective of the freshwater diversion projects, such as the Carnarvon structure shown in the left column, is to produce a healthy ecosystem by retarding saltwater intrusion and establishing favorable salinity conditions. Louisiana Department of Wildlife and Fisheries biologists (right column on this page), are conducting postconstruction research to determine the effects of the diversion. Monitoring devices measure the salinity of the water at desginated sampling stations, and trawls are used to sample shrimp, blue crab and finfish.

monitoring for the Caernarvon Diversion uses data collected from existing sampling stations along with additional stations added specifically for this project. The preconstruction phase of the monitoring began in 1988 and the postconstruction phase began with the operation of the structure in 1990.

Oyster populations are monitored by several methods. From March to November, weekly deployments of spat (larval oysters) collecting plates are made at five stations on the public Oyster Seed Grounds and one station on the Bay Gardene Seed Oyster Reservation. This information is helpful in predicting the following year's seed oyster production.

Estimates of seed and sack oyster densities on the seed grounds and reservation are made by means of meter square sampling. A one-meter-square aluminum frame is tossed overboard and a SCUBA diver removes all oysters and shell within it. Live and recently dead oysters are counted and measured. An estimate of the total amount of seed and sack oysters from the public grounds is provided by these samples.

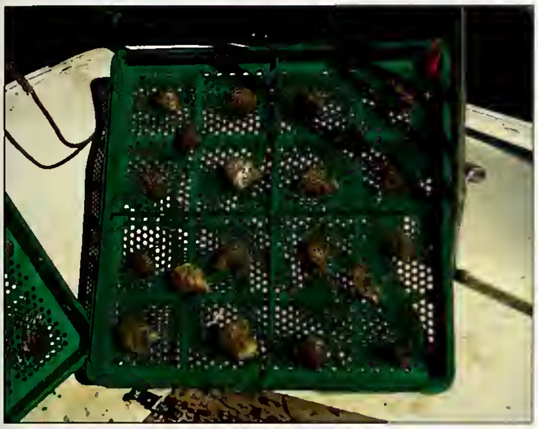
Yearly oyster harvest estimates are made from boarding surveys of commercial oyster boats fishing on the public grounds or reservation. The location, method of harvest, number of sacks and vessel size are recorded.

To fully determine the impact of the diversion, it became important to identify the geographical limits of the productive oyster zone both before and after diversion. Since there was no consistent sampling of oyster populations on the privately leased water bottoms in the Breton Sound Basin, a new monitoring scheme was designed.

Fourteen stations were chosen to represent the complete range of productive and potentially productive oyster growing areas. Twenty oysters were attached to 70-centimeter-square shallow, plastic trays so the growth and survival of each oyster could be monitored. Two trays were placed at each station and are checked each month for survival and growth.

Brown and white shrimp along with blue crab and finfish are monitored through the use of six-foot and 16-foot flat otter trawls. Six-foot samples are taken at stations in shallow, inshore waters while 16-foot samples are taken in deeper, open water stations. All species caught are identified, counted and a sample of 50 is measured.

Data compiled by the Department's Marine Fisheries Division will be used to help assess the impacts of the diversion on finfish populations. Sample gear used includes a 50-



As part of the postconstruction research, oyster populations are carefully monitored employing various methods. Among these are the use of scuba gear for meter square samples. This method of sampling helps estimate the seed and sack oyster densities on the seed grounds and reservations. To monitor oyster populations on privately leased water bottoms, oysters are attached to plastic trays and carefully monitored and measured to determine the survival and growth of each oyster. Bioligists also interview oyster fishermen about their daily harvests.

foot nylon bag seine, a 750-by-eight-foot experimental gill net with five panels of varying mesh size and trammel nets. All fish are identified, counted and a sample of 50 is measured.

Salinity and water temperature are measured at all biological sampling stations. The department also monitors salinity at 16 isohaline stations and through the use of permanently mounted constant recorder instruments. This data is used to plot isohaline lines (areas of equal salinity) which provide valuable information concerning the effects of salinity on fishery resources, particularly oysters.

Waterfowl are monitored by the department's Game Division while the marsh vegetation, muskrat and alligators are monitored by the Fur and Refuge Division. Both employ the use of aircraft to fly along north-south transects across the Breton Sound Basin. Estimates of population size are made through visual observations.

The overall objective of the diversion is to produce a healthy ecosystem by retarding saltwater intrusion and establishing favorable salinity conditions. Marsh productivity and corresponding fish and wildlife production will increase.

Since the long-term benefits of the project will be an increase in commercially and recreationally important finfish and shellfish species, the harvest of these resources must be carefully monitored. A port agent is assigned to do just that. His major duty is to visit fish houses and interview commercial fishermen. Data on species, where caught, number of pounds, and landing dock are obtained.

In addition, he conducts roving surveys by boat of the Breton Sound Basin, interviewing both commercial and recreational fishermen. This data, along with landings provided by the National Marine Fisheries Service (NMFS), is invaluable in estimating the fishery harvest.

The monitoring performed by the Department of Wildlife and Fisheries with the cooperative efforts of other state (Department of Natural Resources, Department of Environmental Quality), federal (U.S. Fish and Wildlife, NMFS, USACE) and local (Plaquemines Parish) agencies is targeted at securing the most productive operation of the Caernarvon Diversion Structure. The success or failure of this project will go a long way in determining the future of, not only other diversion structures, but more importantly the future of our state's wetlands resources. □

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The collection of old novelty baits is a hobby only a handful in Louisiana presently pursue seriously. But those who do consider it almost an obsession!

LURE OF LURES

ARTICLE BY GERALD ADKINS

PHOTOGRAPHY BY BILL FORD

Hey, look, it's glass-eyed, with a one-hump 'L' hanger."

"Yeah, but I still think the red-head with the toilet seat is much prettier."

"No, no—look at the one with the two-piece tail hanger. There's even a belly weight on that one."

"Well...I'll agree that one probably is worth the effort of trying for, if you are desperate. Me, I'm going to move to the next place. Maybe I'll find one with only a screw hook and hopefully a screw eye."

Even though the imagined (sometimes real) conversation above sounds downright weird, it involves a very lively topic which may arise anytime. Although most people engaging in such activities are not well known, they are very intense in their search. You see, they are discussing old fishing lures while attempting to purchase or swap (preferably the latter) some with another individual of similar inclination.

The old bait or fishing lure syndrome is one which afflicts only a few people in Louisiana; only 20 are listed as members of the National Fishing Lures Collector Club. There are approximately 44 in six foreign countries. These numbers probably won't be enough to set the medical world on fire, but each person affected is deadly serious about his unusual condition. Collecting, swapping, buying, restoring, discussing, and fondling old baits and other fishing memorabilia is a fairly recent hobby in most cases, although it actually began approximately 160 years ago.

As the story goes, a young man on a picnic accidentally dropped his mother's brass spoon into the water. A huge swirl, a dark, fleeting shape and the spoon's disappearance under the water actually sparked the fishing lure industry as we recognize it today.

The young man's name was Julio Buel, and the year was 1834. Following the fish's attack on the spoon, Buel modified a spoon attached a hook and an attachment for a line and began catching fish, particularly largemouth black bass. Later he tried knives, forks, tin plates, cups, a water container, and even a small wicker picnic basket. Can you imagine casting a picnic basket? Better yet imagine what you'd catch!

Following this trial and error period, in 1848 the Buel spoon became the first commercially produced fishing lure, although several handmade, non-commercial lures were present prior to this date.

The next development occurred some years later when James Heddon threw a piece of wood he was idly whittling into a body of water near the southwestern Michigan town of Dowagiac. A large bass immediately rocketed from its hiding place and smashed the piece of wood. Perhaps this was destiny, as the word Dowagiac in Pottawattamie Indian dialect means "many fishes." Legend says Heddon began producing quantities of wooden baits shortly thereafter for commercial sale. He formed a lure company in Dowagiac, and continual production until the present earns it the title of the oldest lure manufacturer in the world.

Patents were soon applied for, and the Wood's Trolling Spoon was granted a patent in 1876, followed by others, among which were the Decker Lure manufactured by George and Ans Decker, Malcolm Shipley's Cedar Propeller, and the Silver Bird. The earliest documented lure manufacturing company was Enterprise Manufacturing Co., a spin-off of the E.F. Pflueger Co. of Akron, Ohio, chartered in 1884.

Earlier lures were either wood or metal, as moldable plastic was generally unavailable before approximately 1940. The lure industry was occupied by the "big five" companies; Heddon, Creek Club, Shakespeare, Pflueger and Southbend. They produced lures with names like The Coaxer, Jersy Wow, Multi-Wobbler, Crab Wiggler, Tango Minnow, Flying Hellgrammite, and Jitter-Bug.

Most of the earlier baits were handmade, of course, and painted to resemble the natural prey of fish such as mice, minnows, frogs, insects and even red-winged blackbirds.

In approximately 1940, plastic suitable for lure construction became available. One of the first plastic baits was made of pyralin, one of the cellulose nitrate type plastics developed from a patent by John Wesley Hyatt.

Approximately at this time World War II began, necessitating the use of metals for construction of war machines. Plastic really came into its own during this period due to availability. One easy way to date a bait common during the early 1940s was to check the lip attached to the front of the lure; if it was metal, the bait was usually made before or after 1940-45. If plastic, the bait was made during the war's five-year period because of the scarcity of suitable metal.

Several million, perhaps billions, of baits have been produced since the "spoon and stick" discoveries decades ago. Some of the baits have been very successful while others have caught only fishermen.

Regardless, many people collect these baits for various reasons. Some collect only baits made by Heddon, others only frog-type baits, others homemade baits, some only metal baits. Whatever the interest, most baits manufactured before 1940 are in great demand by those people smitten by the lure collectors bug. To most, trading is the most interesting aspect of the hobby, although some only prefer to buy, while the search for oldies is what satisfies others.

Whatever, the satisfaction one gets from this hobby is often just imagining what Louisiana and other environments must have

The author says he loves collecting baits for many reasons, but perhaps the most satisfying is imagining what Louisiana must have been like in the days the old baits were used--visualizing lazy spring days when the splash of a plug was the only sound you heard.

Some collectors collect only Heddon baits, such as the Zig-Wag directly above or the Wounded Spooks at top. Others try and collect as diverse a variety as they can possibly buy, beg or trade!

been long ago when these baits were used. Visualizing the lazy spring days in an old wooden bateau when the splash of the plug and the resulting attack (you hope) of the fish were the only sounds, when one returned home with his green trout without hundreds of automobiles, red lights, shopping centers...

How many of us would like to be able to experience fishing a Wounded Spook, Dying Flutter, Egyptian Wiggler, or a Paw Paw during their hey-day?

Call me, please! ☐

Fragile Frontiers

The National Wildlife Federation and its state affiliates have chosen "Fragile Frontiers—The Ends of the Earth," as the theme of the 1991 National Wildlife Week. During the week of April 21-27, millions of people of all ages will participate in this annual celebration, learning about the beauty and fragility of the earth's polar regions, as well as the wildlife, ecology and the native peoples of these regions. In addition, the month of April has been designated as Earth Action Month to emphasize the importance of people taking action to protect the environment.

To help America celebrate Wildlife Week, the National Wildlife Federation and its state affiliates will distribute more than 600,000 education kits, free of charge, to educators across the country. Included in the kits are a 16-page educator's guide for grades K-8, a two-page list of action tips on how students can get involved in taking action to protect the environment, a full-color theme poster of both arctic and antarctic plants and animals, and an educational materials catalog. The following schedule lists some of the events planned in Louisiana to celebrated Earth Day and National Wildlife Week.

Calendar of Earthday Events

March 23-24 — Earth Fest '91 at New Orleans Audubon Zoo. Fun-filled and educational events for zoo visitors where the environment and our planet are the focus. Activities include recycling, conservation displays, wildlife gardening and puppet shows.

April 19 — Sierra Club Delta Chapter's Sierran Sunset at New Orleans City Park. Events will begin at 7 p.m. till 10 p.m. with emphasis on the environment and activities centered around the newly renovated carousel. For tickets and more information call Margaret Daly at 504/246-5672 or 504/865-9348.

April 21 — Louisiana's Nature & Science Center in New Orleans will host Earth Day Fest with music, food, crafts for kids, speakers and exhibits from environmental groups. For more information call 504/246-5672.

Flying fishermen like Robert Cunningham of Mobile say Louisiana's beautiful Chandeleur Islands and float planes are a match made in heaven. The firm sand bottom of the scimitar-shaped string of islands makes it a perfect stepping off spot for flying fishermen. And with schools of fat yellow-mouthed specks and thick bronze-backed reds patrolling the clear waters, the fishing is fantastic!

"FLY" FISHING
SOUTH LOUISIANA STYLE

BY BOB MARSHALL

Phil Panepinto is a fly fishermen. So is Steve Littleton. In fact, they probably are the most accomplished fly fishermen in the history of Louisiana angling.

But they've never used an Orvis, never tied a Royal Coachman—or a popping bug, for that matter. And you'll never hear them talking about nine-weight rods, 4X tippets, double-hauling or matching the hatch.

Instead, these fly fishermen are consumed with Cessnas and pontoons, flaps, rudders and downwind legs.

That's because when they go fishing, they don't crank up the outboard. They fire up the engine—and fly.

"The only way to fish," cracks Littleton.

"What's a boat?" smiles Panepinto.

Both men are in their 60s. Neither is sure whether they are fliers who fish, or fishermen who fly, but each claims his life would have been much less memorable without both. They run seaplane services in the metro New Orleans area, spending most of their work days ferrying people and products to the oil and gas well sites scattered across the coastal zone. But they also charter to fishermen, flying anglers to the Chandeleur Islands, the barrier chain that has fueled angling legends along the Gulf Coast for most of the century.

The islands and float planes are a match made in heaven. Few marine anglers who grew up along the Gulf Coast haven't heard of the Chandeleurs, a scimitar-shaped string of mangrove-covered sand bars and shell banks strewn for 50 miles across the Gulf, 25 miles off the southeastern Louisiana coast. Their remoteness alone provides a mystique, but the fishing stories they have generated have built them to heroic proportions. Stories about hard sand bottoms with graceful grass beds waving gently in crystal-clear water; about schools of fat yellow-mouthed specks patrolling the breakers, and thick bronzed-backed reds hiding in grass beds and chasing down gold spoons.

Much of it is true. The Chandeleurs actually are the remnants of the Mississippi delta from a time when the river emptied into the Gulf considerably east of its present course. When the river jumped westward about 1,800 years ago, the delta quickly subsided, isolating the old beach fronts as barrier islands. They constantly are on the move, pushed north and west by tides and currents, being reshaped by hurricanes.

But through it all they have remained a unique fishery habitat for Louisiana. Unlike the coastal marshes, which are murky in calm conditions and muddy in a slight chop, the flats behind the islands can be transparent, giving anglers a chance to see the targets they cast to.

The targets come often. Specks and reds are attracted to the island by schools of smaller fish and crabs which work along its beaches and hide in its grass beds. Some biologists think the islands may serve as an ideal oasis of food and shelter for fish migrating between the inland marshes to the deeper Gulf, especially during the winter. The chain also receives considerably less fishing pressure or environmental impacts than suffered by the interior marshes.

But as much as anything, the Chandeleurs are perfect for flying fishermen because of the firm bottom. Try stepping off a pontoon in most of Louisiana's marshes, and an angler will sink up to his neck.

Panepinto grew up in the New Orleans area listening to the stories about the islands and the fish. But, like most locals, he figured he never would get the chance to see them firsthand.

"It was a long way out there, and it took a pretty big boat," the 66-year-old remembered. "I fished in the marshes, but I'd never been out there."

That changed when he got his pilot's license and began flying to the remote drilling sites east of the river.

"I'd never heard of fishing from a plane until about 1962," he recalled. "I'd been flying since 1952 and started Southern Seaplane Service, and I was heading out to Quarantine Bay (on the edge of Breton Sound) when I looked down near Hog Island and saw this guy standing waist-deep in the water.

"Well, there was no one else around—no boat, nothing. So I figured he was in trouble, and I pulled around and landed. When I got up to him, I saw he had a fishing pole. I said, 'Hey, man, what're you doing out here?'

"He answers, 'I'm fishing'—like it was the most natural thing in the world."

It turned out the angler had been dropped off by another float plane pilot, who returned to pick him up later.

The incident piqued Panepinto's interest. He discovered another pilot was flying to the islands. Within weeks, he made his first trip; within months, he was guiding others.

"People asked me to do it," he admits. "It was an idea I'd never thought about."

Steve Littleton had. Working out of a seaplane base off Chef Pass, on the other side of the metro area from Panepinto, Littleton literally had learned to fly so he could fish the islands.

"I fell in love with flying and fishing and the islands

You won't hear this "fly" fisherman talk about using an Orvis, or tying a Royal Coachman or a popping bug. Instead, you'll find he is consumed with Cessnas, pontoons, flaps, rudders and downwind legs.

A flying fishing trip to the Chandeleurs is altogether different from a boat trip. Instead of spending most of the time traveling out there and back, and in running from spot to spot, the plane allows you to spend most of your time casting. And two hours after your last cast, you are back home, resting with your memories.

The season never ends for flying fishermen, thanks to the location of the Chandeleurs and the plane's ability to skip over rough water. Prime speck season is April through June. Reds begin showing up in the fall and can be found in the shallows or cuts until March and April.

all at once," Littleton admitted. "It was so beautiful and peaceful out there. And, of course, the fishing was fantastic."

Littleton's Trans-Gulf Seaplane soon was offering chartered trips to the islands.

"Back in those days the only people doing it was Steve and me," Phil said. "Today you see a handful of private pilots, including a group from Mobile.

"But, basically, it's still just me and Steve. And that kind of amazes me, because it's got to be the only way to fish the islands.

"People who try it usually like it. It's fun, simple, clean. Just a different experience."

The differences are obvious before the trip starts. Because the islands are 25 miles from the nearest marina, a boater planning a trip is burdened with logistical challenges: How much water, fuel, ice and food to bring? One mistake can ruin the trip. And the entire chain is over 50 miles long; locating the fish can take an entire day. Because of that, few boaters head for the chain without planning to stay at least two days.

Add the long trip there and the trip home, and a boating excursion to fish the islands normally takes three to four days. Even then, the fish and the weather may choose not to cooperate.

Flying fishermen don't have those worries. The trip will last four to six hours—but cover more water.

The routine is a model of simplicity. As many as three anglers pile into the four-seat plane. After everyone is strapped in, the pilot climbs into the left seat, checks his radio and instruments and taxies out onto a long canal. The engine powers up with a loud roar, the plane begins gaining speed over the smooth water, and with hardly a notice, it leaves the canal and climbs into the blue sky, banking south toward the islands.

As the plane rises, Louisiana's fabulous coastal marshes spread out below, a rich green mosaic of grass, ponds, bayous, lakes and canals. Within 30 minutes the marsh has dropped behind, and the islands are rising in the distance.

At first they are unimpressive, just light smudges against the dancing waves of the Gulf, but as distance narrows, the chain gains definition. The southern edge facing the Gulf is a white or caramel-colored beach two to three feet high, accepting the constant assault of breakers. The beach is backed by a mixed grass and mangrove marsh perhaps one-quarter to one-half mile wide. The marshes are followed by long, shallow sand flats extending as far as half a mile to the north, dotted with grass beds. Storms have constantly changed the islands, reshaping them, submerging some, bringing others into life, as the chain moves slowly northwestward.

In a patch of clear water behind Freemason Island, a pile of shells near the midpoint of the chain, Littleton sets the plane down. He checks his watch. "We left the base just a little less than an hour ago," he pointed out. "If you were fishing in a boat, it would have taken you two hours just to reach the southern end of the islands from the nearest hoist."

Quickly the group is out, walking across the hard sand bottom, tossing white grub tails into clear water. The selection of lures is basic; the flying fishermen know reds are suckers for gold spoons and plastic cockahoe minnows in avocado with red flecks. Specks are a little more choosy, but only just: they will hammer a white sting ray grub with red tail, clear or chartreuse sparkle beetles, and the cockahoe.

The three anglers have walked only 100 yards before the Chandeleurs begin giving up some of their treasure—six- and eight-pound reds are slamming the baits. Taking the pilot's advice, the group has come equipped with medium to light tackle: six- and seven-foot graphite rods with fast tips, eight- to 12-pound test line and medium-weight spinning or baitcasting tackle. All of it will need a thorough washing back at home, because wade fishing puts the gear right in the salt.

Using light tackle means each fish is allowed to give its all. By the time four reds are landed, the school has moved on. No problem: The group loads back into the plane, and heads for another location.

Panepinto always laughs at the rookies who wonder "if five hours will be enough fishing time."

"People always relate their first flying trip to a boat trip," he smiles. "When you're in a boat, you spend most of your time running to and from the spot. With the plane, you spend 90-percent of your time casting."

The season never ends for the flying fishermen, thanks to the location of the Chandeleurs, and the plane's ability to skip over rough water. Prime speck season is April through June; the fish are there summer-long, but so are sharks. As water temperatures cool by October, the specks seek deeper water, often running off the flats.

But the reds are more hardy. Schools of six- to 12-pounders begin showing up in the fall and usually can be found in the shallows or the cuts until March and April. Waders are the order of the day; when the temperature gets cold some anglers prefer the neoprene style worn by cold water trout fishermen.

"Redfishing may be the ultimate out at the islands," Panepinto says. "You get those big fish in shallow water on light tackle, and you'll literally get tired of fighting them.

"In January we had a trip and the four fishermen (three anglers plus the pilot) had their limit of reds (a total of 20) in 30 minutes. Then they caught and released fish up to 15 pounds for three hours."

A flying fishing trip ends differently, too.

Two hours after his last cast, the flying fisherman is home, resting with his memories. ☐

The Chandeleurs give up some of their treasure when six- and eight-pound reds begin slamming the bait. Equipped with medium to light tackle, a flying fisherman can literally get tired of fighting them.

Photo by Abe Cochran

New Directions FOR THE FUR INDUSTRY

BY ABE COCHRAN

Louisiana's millions of acres of coastal marsh and swamp as well as inland wetland areas, accounts for the state leading the U.S. in the production of wild furs. During the 1970s and early 80s, a total annual average income of $20 million was earned by some 10,000 Louisiana trappers. Today, however, several factors have made active marketing of Louisiana furs necessary to insure adequate levels of harvest and price stability.

A fact surprising to many people is that Louisiana has led the U.S. in the volume of wild furs produced during the years since these records have been kept.

Of the 12 species of furbearers occurring in Louisiana, the nutria, raccoon and muskrat are by far the most important. During the late 1970s and early 1980s, the value of the state's annual fur harvest by some 10,000 trappers averaged $20 million. The nutria, a large semi-aquatic rodent resembling a beaver with a round tail, accounted for 60 percent of the total value. This tremendous production of furbearers is directly related to habitat—millions of acres of coastal marsh and swamp as well as inland wetland areas.

Throughout history, the market for furs has changed. Fur prices, to a large extent, are influenced by fashion. Just as hemlines and hair length go up and down, trends in fur fashion swing from long-haired coats like raccoon, coyote and fox to short-haired styles, then back again. In the late 1970s and early 1980s it was more common to see raccoon coats, rather than mink, being worn on the streets of New York City.

In the forseeable future, new directions for furbearer management must concentrate heavily on marketing and education.

Although long-haired coats are still being bought and sold in every part of the world, the main demand is for the short-haired, flat-appearing furs such as sheared mink, sheared nutria and sheared beaver. Color has also become such a part of fur fashion that most people may not recognize the type of fur in the coat.

These changes in fashion have dramatic effects on prices paid for fur pelts and thus influence the incentive for trappers to harvest the animals. Ranch-raised mink has always been the bench-mark for the prices of most other types of fur. If prices for ranch mink are high, most other fur prices will also be high.

During the late 1980s world production of ranch mink virtually doubled to 60 million. This not only pushed down prices for mink pelts and coats, but for all other furs as well.

In some cases prices fell so low that very few furs were produced. Prices paid to trappers were simply too low to encourage trapping. Although such factors have played a major role in lowering prices for Louisiana furs, demand for fur can be influenced by other things.

Until recently, northern Europe has been one of the most important fur markets in the world. However, six or seven mild winters, market saturation, shifts to the purchasing of leather coats and general economic conditions have changed the European market. The greatest fur consumers in the world are now North Americans and the Japanese.

All these changes mean this to Louisiana trappers: In order to insure adequate levels of harvest and price stability, active marketing of Louisiana furs is essential.

In 1986 trappers and coastal landowners recognized the necessity of market stability and enhancement, not only for furs but also for alligator skins. For perhaps the first time, resource users approached the Louisiana Legislature and asked for an increase in their annual license fees. The revenue derived from the increase would be used specifically for the stated goals of the industry. This request resulted in the formation of the dedicated fund and created the Louisiana Fur and Alligator Advisory Council for addressing two major objectives:

1. To enhance and stabilize the markets for raw and finished Louisiana fur and alligator products worldwide.
2. To educate the public concerning the role of trapping and hunting in wildlife conservation.

The nine-member council consists of representatives of coastal land companies and trappers statewide. They serve at their own expense in an advisory capacity to the secretary of the Louisiana Department of Wildlife and Fisheries.

Market enhancement is being addressed utilizing the skills of a fur marketing consultant and the development of sales kits, sample bundles and colorful brochures. Manufacturers utilizing Louisiana furs are encouraged through the use of cooperative advertising to display the new label "Genuine Louisiana Bayou Nutria" in their garments.

The marketing consultant encourages the worldwide sale of processed furs (tanned and dyed) by sales representatives to manufacturers. This creates an increasing demand for raw furs produced in this state.

Though marketing and education are being employed to positively influence the fur market for Louisiana furs, the Louisiana Department of Wildlife and Fisheries Fur and Refuge Division is conducting research to determine how diet and lifestyle affect the quality of the nutria pelt.

Photo by Abe Cochran

For the purpose of adding increased stability and new jobs for the state, in-state processing remains a long-term goal of the council. Creating new markets for nutria furs is not something to be accomplished without patience and long-term commitment. However, market stability and trapper incentive are absolute necessities for the achievement of furbearer management objectives.

What are these objectives and why are they so important? A sustained harvest of muskrat and/or nutria on a tract of land is a major objective of a marsh land manager. Such a harvest can produce several positive effects:

An adequate annual harvest reduces potential overpopulations.

Profits from trapping provide supplemental income for coastal families.

A portion of the value of the fur produced from trapping is returned to the land company and thus provides a positive economic incentive to protect and manage the land for a variety of fish and wildlife species. Management of coastal wetlands has been more complicated by the many factors causing wetlands loss.

There are several factors acting independently, and sometimes in combination, that result in loss of coastal marshes. In the past, some estimates of land loss have approached 50 square miles per year. All the processes involved in land loss are not totally understood. However, subsidence, sea level rise, channelization, saltwater intrusion and leveeing of the Mississippi River are major contributors to wetlands loss.

Another seldom considered factor which can add to wetland problems is vegetative damage caused by overpopulation of muskrat and/or nutria. These rodents are herbivores (they feed on vegetation), and if numbers are not controlled, they can increase to a population level that cannot be supported by the available vegetation. This results in an "eatout," a condition in which an area is stripped of vegetation (sometimes including the roots).

The severity and long-term impact of such eatouts is variable and is not entirely clear. However, marshlands being impacted by other major factors will no doubt have accelerated loss rates if vegetation is damaged by muskrats or nutria. The population control trapping provides can reduce or eliminate such damage.

The overall productivity of marshlands is related to the number of acres of vegetation. Anything reducing acres of vegetative wetlands is negative from a fisheries and wildlife perspective. State officials transplanting vegetation in areas subjected to high wave energy or increased water salinities have reported nutria (if not controlled) can damage the majority of the plants in such a planting very quickly.

Research on the emerging Atchafalaya Delta, south of Morgan City, has indicated that overpopulation of nutria, resulting in vegetative damage, may be adversely affecting the growth of the delta. During the late 1950s and early 1960s nutria were causing serious damage to rice and sugarcane crops. Many alternative control measures, including poisoning, were evaluated. However, the problems were solved only with the development of strong fur markets and accompanying fair prices paid to trappers.

The public must be made aware of this information, both through the media and other methods of education. It is critical that the

Trends in fur are just as volatile as trends in hemlines. They swing from long-haired coats like fox, coyote and raccoon to short-haired styles, then back again.

justification for trapping as a crucial wildlife management tool be understood by every citizen of Louisiana and the United States.

During the past 15 years "animal rights" organizations have increased their protest activity in Europe and in the United States. The original agenda of many of these groups, as perceived by the general public, was humane treatment of animals. However, once the real agenda has become known, it becomes obvious that these groups are working for "giving animals rights equal to humans." They not only oppose the use of furs, trapping, hunting and fishing, but also are trying to stop the use of animals for medical research and food (livestock production).

Although this philosophy is considered ridiculous by many citizens, such groups always attempt to talk about a very small portion of their real agenda. They also successfully use uninformed celebrities who tend to attract media coverage. Historically, the general media has chosen to cover the controversy surrounding the attempt to restrict or stop trapping or hunting. Fortunately, the media is now becoming interested in the real issue—wildlife conservation.

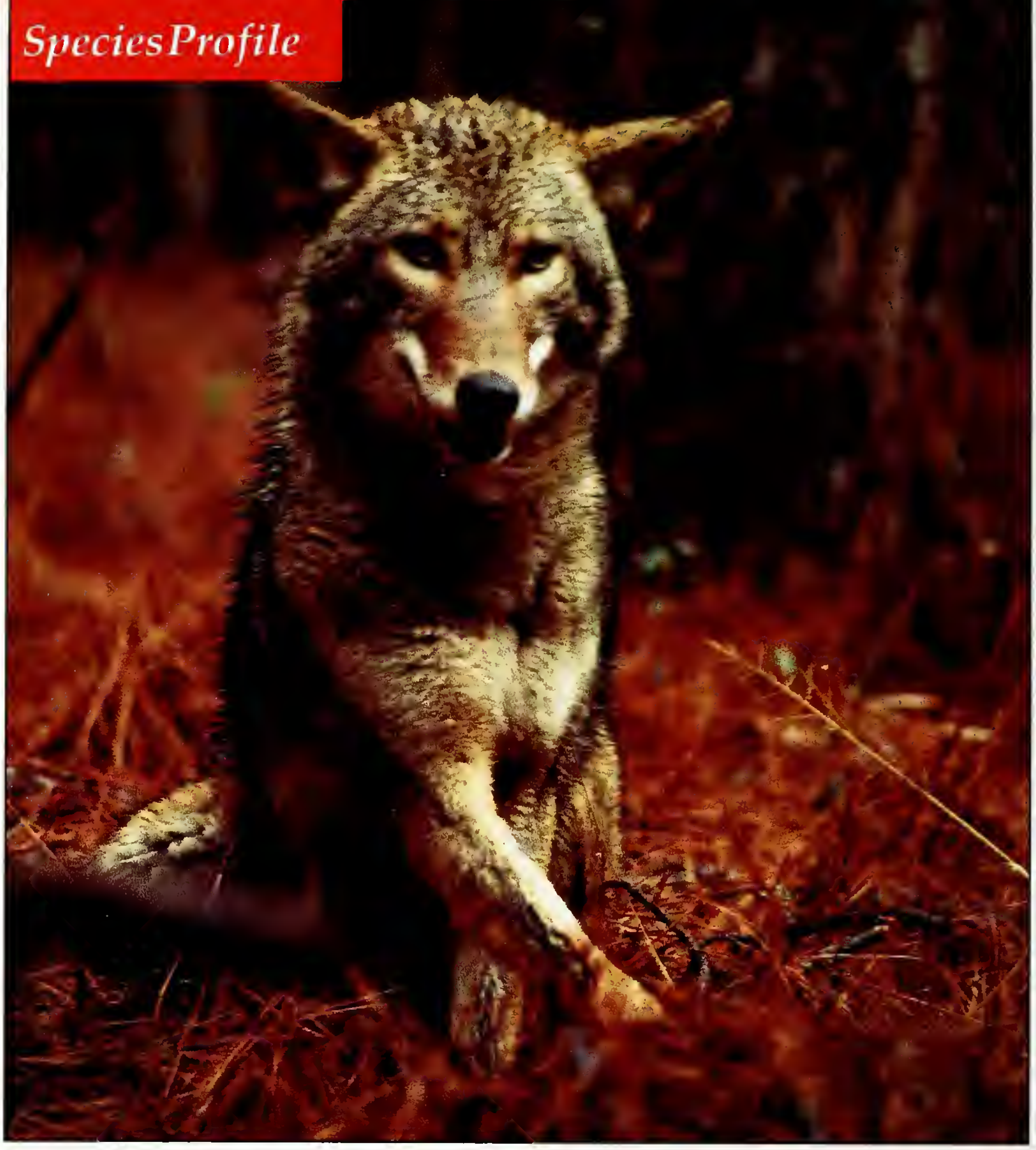
The Louisiana Fur and Alligator Advisory Council is charged by its second goal to provide real facts to the public concerning the role of trapping and hunting in wildlife conservation. The council and Louisiana Department of Wildlife and Fisheries personnel provide information to the media (newspaper, magazine, radio and television) and to the public through literature, presentations, displays and exhibits at public functions and gatherings.

The efforts of animal rights activists can be seen everyday, especially in children's programs and cartoons. If wildlife management professionals and sportsmen fail to get the facts across through the media, and by word of mouth, we will lose much more than our markets and fur consumers. The future of hunting, eventually fishing and a major portion of the state's coastal economy, will hang in the balance. We believe that accurate information can make a difference.

For the foreseeable future, furbearer management will include much more than research on species and habitat. Successful management must include work with markets and media. □

The nutria, a large semi-aquatic rodent resembling a beaver with a round tail, has traditionally accounted for 60 percent of Louisiana's wild fur harvest.

Species Profile



The coyote, which can be found throughout Louisiana, closely resembles a German shepherd, but is typically more leggy and thinner in the paunch and hip area. Adults can weigh from 20 to 40 pounds.

Coyote

BY MARTY EDMUNDS

Records indicate that the coyote *(Canis latrans)* began to invade northwestern Louisiana in the early to mid-1940s. At present, Department of Wildlife and Fisheries surveys show that coyotes are well established in almost all suitable habitat across the state. Because the coyote is so highly adaptable in both cover and prey requirements, it may be found anywhere from pastures and agricultural areas to swamps and timberlands to more urban habitats .

The coyote closely resembles a dog, particularly a German shepherd. It is typically more "leggy" and thinner in the paunch and hip area. Coloration in coyotes varies from pale cream to black, with the most common color being gray with rusty red. Adults range in weight from about 20 to 40 pounds. Reports of Louisiana coyotes in the 60- to 80-pound range may in fact be offspring from coyote-dog interbreeding.

Whether as individuals or in nomadic packs, coyotes are highly mobile and capable of moving long distances in a short time. Even juveniles, when dispersing, may move as much as 30 miles in search of new hunting areas. Once a suitable area is located, the coyote may establish a home range; that is, an area which would encompass his needs for food and shelter.

Home ranges often shift seasonally, governed by such factors as food availability or mating season. Studies on coyote home ranges show dramatic differences in size ranging from two square miles reported in Texas to 55 square miles reported in Washington. On occasion a home range will be occupied by a family unit of two or more generations.

Food preference is a much discussed and "cussed" topic when coyotes are mentioned in conversation. Numerous studies across the United States and Canada have been conducted to determine food habits of coyotes, especially in areas where coyotes were suspected of damage to livestock and agricultural crops.

In Louisiana, food habit analyses indicate that rabbits and rodents such as woodrats and cottonrats comprise the bulk of the coyote food supply. White-tailed deer occurs in the coyotes' diet mostly during the time fawns are born and then again during fall and winter. Although deer are sometimes taken as prey, a large percentage of deer occurrence in the diet can be attributed to consumption of deer as carrion. That includes feedings on still-born fawns, hunter loss or remnants of deer resulting from field dressing.

The same is true in the case of reported livestock loss. Many times chicken feathers or cow hair may be found in coyote stomachs. Again, determination whether taken as prey or carrion is difficult. Sometimes those who witness a coyote feeding on a deer or cow assume that the coyote actually killed the animal, when in fact death of the deer or cow may have resulted from some other cause.

On several occasions when Louisiana Department of Wildlife and Fisheries personnel have investigated "coyote depredation," they find the culprit to be a feral dog, or the neighbor's dog, or sometimes even the dog belonging to the complainant.

Not only are coyotes opportunistic predators, they are also omnivorous, which means they eat vegetable matter as well as meat. Seasonal fruits such as persimmons and plums are favorites of coyotes. They also have a fondness for watermelons. Many a watermelon farmer has had his fields raided by marauding coyotes.

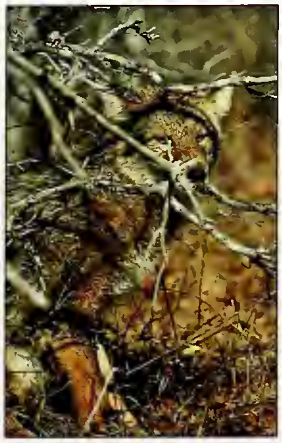
Mating usually takes place from January to March. The female has one estrus per year lasting four to five days. Gestation is about 60 to 63 days, with the mother giving birth to an average litter of four to seven pups. Litter size is usually determined by prey availability. Some evidence exists that in western states where intensive control measures are in effect, average litter sizes may be larger, indicating that coyotes may have the capabilities of a "compensatory type" reproduction.

Many factors contribute to mortality in coyotes, including man. Trapping and hunting play a part in reduction of coyote numbers, as do, but to a lesser degree, encounters with vehicular traffic. Heartworms and hookworms are the primary parasites which infect coyotes. High parasitic loads of either may cause a coyote's death. Mites which cause sarcoptic mange are an ectoparasite commonly found on coyotes. The most common viral infections are distemper and canine hepatitis. The occurrence of rabies in coyotes does not seem to be as common as in skunks and foxes.

The value of the coyote as a fur animal varies with fashion trends as well as foreign exchange rate. Louisiana Department of Wildlife and Fisheries records show that in 1973-74, 382 coyote pelts were sold at an average of $12. Harvest along with price increased over subsequent years and peaked in 1979-80 when an estimated harvest of 4,000 coyote pelts brought an average of $22. As garment styles cycled away from long-haired furs, demand and price softened for coyote pelts. Today a good quality Louisiana coyote pelt will sell for only a few dollars.

In areas that were traditionally fox hunting grounds, houndsmen have found their native fox being displaced and replaced by coyotes. As adaptable as is the coyote, so too were the houndsmen. They modified their hunting techniques and restructured their dog packs. Now the "race" and the hounds may be slightly different, but the coyote affords the opportunity for houndsmen to watch a campfire at night and listen to Ole Blue light it up after one of Louisiana's many coyotes. □

Like the cartoon character, the coyote is indeed wily, and is highly adaptable in both cover and prey requirements. It may be found anywhere from pastures and agricultural areas to swamps and timberlands to more urban habitats.



LAW LINES

Behind the Badge

BY CAPT. KEITH LaCAZE

Spring in Louisiana offers many boating opportunities. We are blessed with numerous lakes and rivers and many are easily accessed. Activities include fishing, waterskiing and canoeing.

An important part of your boating preparation should be a thorough check of all the equipment in your boat. Now is the time to replace or repair faulty gear and to acquire all items that the law and common sense dictate.

We can devise a check list consisting of two categories: registration and safety equipment.

In Louisiana, all boats with motors, including electric trolling motors, and all sailboats over 12 feet in length must be registered and numbered. If your boat is not properly registered, you should obtain a registration application. Fill out the form according to the instructions, and send it to the Department of Wildlife and Fisheries at the address provided. Fees for the different registration transactions are listed on the form.

Upon receiving and approving your application, the department will issue you a certificate of number, stating the number assigned to the boat, and two decals. The certificate of number is valid for three years.

The boat registration certificate must be on board the boat at all times. Print or attach the assigned number and the decal to the boat according to the instructions provided with the certificate.

The most important equipment on any boat is the safety gear. Unfortunately, it is often the most neglected because it is rarely, if ever, needed. But remember that when you do need it, your life or the lives of loved ones may depend on it.

The first article you should inspect is the Personal Flotation Device (PFD) or life jacket. Every recreational boat must carry at least one U.S. Coast Guard approved PFD for each person on board. All PFDs must be serviceable, readily accessible and of the correct size for the intended wearer. By serviceable we mean that the PFD must be in good condition with no tears or punctures, and all straps and buckles must be attached and functional.

Several types and styles of PFDs are available. Be sure that the ones you select are Coast Guard approved.

The next item on the list is Visual Distress Equipment. All recreational boats, when used on coastal waters and the territorial seas in areas greater than two miles wide, must be equipped with visual distress signals. Recreational boats less than 16 feet in length, boats participating in organized events, open sailboats less than 26 feet in length not equipped with propulsion machinery and manually-propelled boats are not required to carry day signals, but must carry night signals when operating after dark.

The two types of visual distress signals are pyrotechnic and non-pyrotechnic. Pyrotechnics must be Coast Guard approved and include light or smoke producing flares. Non-pyrotechnic signals include orange distress flags and electric distress signals. They must meet Coast Guard requirements.

Both types of signals must be serviceable and stowed where they are readily accessible. Be aware that no device is ideal under all circumstances. It is recommended that you carry both day and night signals on board your boat and all passengers should be familiar with how they operate.

Another very important piece of equipment is the fire extinguisher. All mechanically propelled vessels less than 26 feet must carry one B-1 U.S. Coast Guard approved fire extinguisher. A fire extinguisher is not required on outboard motorboats less than 26 feet in length if the construction of such motorboats will not permit the entrapment of explosive or flammable gases and if fuel tanks are not permanently installed. Even though you may not be required by law to have a fire extinguisher in your boat, keeping one on board is a good idea.

Something which may not be considered safety equipment by the average boater is an anchor. It can be of vital importance, however, should your engine fail on waters where wind or tide may take you far from land or assistance. All boats should carry an anchor and anchor line of sufficient weight and strength to provide safe anchorage. Select an anchor which, when planted on the bottom, can hold your boat in the worse conditions of wind and tide. The length of the anchor line should be between four and seven times the depth of water you normally anchor in.

Another small but potentially important item is a horn or bell. All boats 16 to 26 feet in length must carry a hand, mouth or power operated whistle. A sound producing device is a good idea for any boater since it can be used to signal for help or to make your presence known to larger vessels.

The final item in the safety equipment category is navigation lights. Commonly called running lights, navigation lights must be displayed between sunset and sunrise by all recreational boats. They must also be displayed during daylight periods of reduced visibility. Make sure your sidelights are functioning and properly mounted with the green light on the starboard or right side and the red light on the port or left side. The stern light must be white and visible from all directions.

This completes your boating safety checklist. However, do not forget to review all rules and regulations that pertain to your boating activites. For more detailed information, the "Louisiana Boater's Guide" is an excellent publication which covers all the basic boating requirements. It can be obtained free from the Department of Wildlife and Fisheries. You should also enroll in a Boating Safety Course. The course is sponsored by this department and is excellent. Contact your regional office for more information about the course.

Boating is an enjoyable form of recreation which carries a substantial burden of responsibility. Be fully prepared before you ever launch the boat and have a safe and happy boating season.

Before hitting the waterways this spring, check to be sure all the proper safety equipment is present and in good working order.

Outdoor Tabloids Should Be a Hit

FUNNY SIDE UP

BY GLYNN HARRIS

Artwork by David Norwood

"Missing Child Discovered Inside Pumpkin." The headline fairly jumped off the page as I stood in line at the neighborhood supermarket recently. I admit I'm a sucker for tabloids I find in the rack next to the checkout counter at most grocery stores. Not gawking at them with their celebrity photos and sensational teasers is like not noticing Miss Shongaloo standing there behind the cash register wearing nothing but a string bikini.

Although these sensationalized tabs are always way out there on the fringe of credibility, they sell because they grab your attention.

I couldn't resist the urge to plunk my money down to read the story under the heading, "Donald Reforms; Begs Ivana's Forgiveness; Proves It by Donating Casino to Swaggart Ministries."

I was also done in by the one with the heading, "Woman, Age 95, Gives Birth; Baby Born With Blue Hair and Full Set of Dentures." Another one that ended up in my shopping cart carried the headline, "Boy Raised by Pigs Grows Curly Tail and Eats Swill."

Up until now, it's been the Dollys and the Stallones; the Roseannes and the Donalds; the pumpkin kids and pig-boys who have grabbed the headlines in supermarket tabs. If big-name tabs like the National Regurgitator should get wind of the weird and sensational stuff that goes on in the outdoors, the celebrity stories would pale in comparison.

For example, you could sell lots of tabloids if the lead story was something like, "Man Bags Trophy Buck - Finds Out It's a Doe." Happens every season, doesn't it? Somebody downs a buck, turns "him" over to begin field dressing and...uh, oh. This deer has a serious hormone problem.

Or what about "Hunter Knocked Goofy by Falling Goose?" You heard that one, I'm sure. Two hunters are in a blind, one shoots a goose that crashes into the cranium of the other hunter who, at the time, is swinging on another bird. The hunter recovers, but reports are that he falls to the ground, assumes the fetal position and whimpers softly everytime a flock of migrating geese fly over.

Deer hunters seem to encounter the bizarre more than others. One story I heard involved a hunter who bagged a trophy buck, laid his customized A-bolt rifle across the "dead" deer's antlers and stepped back to take a photo. The buck, which apparently had a thing about having its picture taken, jumped to its feet and sprinted off through the woods with the rifle still firmly attached to its antlers.

Another supposedly deceased deer made the news while being transported from the woods in the back of a pickup. Ever have the feeling that somebody is watching you? The hunter did when in his rear-view mirror he saw the buck stand erect, give him an icy stare, hop out of the truck and bound away.

An interesting sidelight to this story was the hunter's report of the buck coming down the trail toward his stand with what appeared to be a battered customized A-bolt rifle on its antlers. Let's see...is it cats—or deer—that have nine lives?

"Man Shoots Squirrel; Blows Up Creek." How's that for a headline? That's exactly what happened this past hunting season when a north Louisiana hunter spied a squirrel across a creek and began stalking it. Reaching the creek bank, the hunter raised his shotgun, took aim, and fired.

What the hunter didn't know was that an oil storage tank upstream had been leaking for some time, coating the creek with a thin but highly flammable film of oil.

When the shotgun fired, the creek retaliated with an explosion of its own. The creek literally blew up and caught fire. The hunter fled, shaken but otherwise unhurt.

No one knows what happened to the squirrel, but, according to an unconfirmed report, a trophy buck was seen fleeing from the inferno with what appeared to be the battered remains of a customized A-bolt rifle dangling from its antlers.

All this sure makes Roseanne's shenanigans seem boring, don't you think?

Conservation Notes

Zoo Aids War Loss

Two Arabian oryx from the Baton Rouge Zoo will soon be joining other zoo animals as part of a restocking program to replace wildlife killed in the war with Iraq.

Zoo Director George Felton has been asked by Jim Dolin, coordinator for the Species Survival Plan, to supply some exotic hoof stock to send to Saudi Arabia now that the conflict has ended. Felton said that it is unfortunate that the native wildlife also falls victim to the war, but that the Baton Rouge Zoo will help resupply some of those animals.

Thousands of animals used to roam the deserts of Saudi Arabia, Jordan, Israel and Oman. However, by 1972, oryx in the area numbered fewer than 10.

The Species Survival Plan, established in the 1982 by the American Association of Zoological Parks and Aquariums, has returned 102 Arabian oryx to their native habitat. However, it predicted many would not survive the war in that region. The Baton Rouge Zoo is one of 22 across the nation that participates in the program.

License Revenues Increased

The latest hunting and fishing license sales figures, released by the Interior Department's U.S. Fish and Wildlife Service, indicate revenue from these sales rose approximately 4.5 percent in 1989. The number of people buying hunting licenses decreased slightly from the previous year; however, fishing license sales held steady.

In Louisiana, 288,534 hunting and fishing license purchasers generated revenues totaling $5,485,156.

Nationally, a total of 15,858,063 people bought hunting licenses in fiscal year 1989, compared with 15,918,522 during fiscal year 1988. Fishing license purchasers numbered 30,302,244 in fiscal year 1989, compared with 30,182,544 in 1988. Income from sales of licenses and associated permits, tags and stamps in 1989 reached an overall total of $740 million, compared with the previous total of $710 million.

Photo by Linda Sanders

Two Arabian oryx will soon be leaving the Baton Rouge Zoo to make new homes in the deserts of Saudi Arabia.

Festival to Celebrate Flowers

The second annual Louisiana Festival of Flowers will be held April 5-7 at Blackham Coliseum on the campus of the University of Southwestern Louisiana.

The program will feature several expert speakers. A plant clinic will be held Saturday, April 6.

The festival will have several booths representing various wholesale and retail nurseries, florists, garden centers, lawn care companies and vendors of horticulture equipment, supplies and chemicals. There will be lectures and demonstrations throughout the day on a variety of gardening and horticulture topics. A plant auction will be held Saturday.

14 Agents Graduate

Fourteen Wildlife and Fisheries enforcement agents made up the first graduating class from the department's new and specialized Wildlife and Fisheries Law Enforcement Academy.

The 18-week course begins with Basic Law Enforcement Academy lasting seven weeks. That is followed by 11 weeks of specialized training in areas such as fish, wildlife and natural resource law, identification of waterfowl, game animals and marine species, routine patrolling and pursuit driving in watercraft and outdoor surveillance techniques.

Throughout the academy, rigorous physical conditioning and strict discipline are stressed.

La. Marlin Migrates to N.C.

A blue marlin captured and tagged near South Pass in August 1989 was recaptured near Hatteras Inlet, North Carolina, and thus has set the record for the first documented migration from the Gulf of Mexico to the U.S. Atlantic Coast.

The marlin was estimated to weigh 100 pounds when released and 200 pounds at the time of recapture almost at year later. ☐

LOUISIANA Conservationist TV MAGAZINE

These oddly prehistoric creatures were once so few in number that they were federally protected, but now are once again abundant enough to provide an important revenue source for many Louisiana alligator farmers -- The American Alligator. Airs March 28.

March 21: Special: ***The Coming of Age of a Sportsman.*** Many of us are excited about hunting game in a familiar tract of backwoods and awed by a mist rolling across a just-discovered red dirt hillside. Tune in to this half hour special and learn how we change and grow in our attitudes about wilderness. Rerun May 2.

March 28: At the end of a dusty road in the hardwoods of central Louisiana are some little-known but well-loved fishing lakes -- Larto-Saline.

April 4: Louisiana boasts a first class oyster industry. Come get your feet wet aboard a classic oyster lugger. Also, get a bird's eye view of exquisite and colorful miniatures of the bird world -- exotic finches.

April 11: The secret to our internationally renowned cooking is in the spices. Tonight, we visit a century-old Louisiana red pepper farm on Avery Island. Also, the Gulf of Mexico is being subjected to a number of conflicting uses. The EPA and other concerned agencies are developing a cooperative management plan to protect this valuable resource.

April 18: Louisiana's endless fishing opportunities would not be possible without one essential element: water. Aquatic Education is a new program that emphasizes the need to conserve our aquatic life and habitat. Also, some fishermen who seek out the tough, tackle-busting redfish often strike out. Here are some tips and techniques to improve your skills.

April 25: You may be surprised to find powerful raptors atop the tallest cypress trees in our swamps. Come see where bald eagles nest in Louisiana. Also, foresters discover an ancient bald cypress swamp -- the ultimate in Louisiana beauty and natural heritage. How appropriate that they have designated one of this state's trees the National Champion Bald Cypress Tree.

We hope you enjoyed this season of our show. Please join us next season for a whole new selection of exciting topics on Louisiana outdoors.

Thursdays at 7 p.m.

THE LPB TELEVISION NETWORK

Anatomy of a Waterfowl for Carvers and Painters
CHARLES W. FRANK, JR.
TIDAL MARSH PLANTS
Lionel N. Eleuterius
The Justin Wilson Gourmet and Gourmand Cookbook
LOUISIANA HAYRIDE
GASTON Goes to Mardi Gras
Written and Illustrated by JAMES RICE
LOUISIANA PLANTATION HOMES
THE FRANK SEAFOOD NOTEBOOK

A treasury of books

ANATOMY OF A WATERFOWL: FOR CARVERS AND PAINTERS

Charles W. Frank Jr.
"A no-nonsense, well-illustrated guide to carving and painting waterfowl...A book anyone serious about painting or carving waterfowl should have within easy reach."
—Waterfowler's World
128 pages, 11 3/4 X 9, 298 color photos, fold-out page showing anatomy of birds in 4 basic positions. **$45.00.**

TIDAL MARSH PLANTS

Lionel N. Eleuterius
This reference book includes entries for over 400 plants of special interest to students, hunters, fishermen, trappers and ecologists. Each entry includes a sketch of the plant, where it can be found, latin and common names, identifying characteristics and scientific information.
168 pages, 7 X 10. **$24.95.**

THE JUSTIN WILSON GOURMET AND GOURMAND COOKBOOK

Justin Wilson
A liberal sprinkling of the distinctive Justin Wilson humor and 50 color photographs featuring Justin displaying his skills in the kitchen and entertaining his friends with the earthy joie de vivre that follows Justin everywhere.
128 pages, 8 X 10. **$16.95.**

GASTON GOES TO MARDI GRAS

James Rice
Gaston, the intrepid green-nosed alligator from the bayou, ventures to New Orleans to visit his cousin Alphonse for Mardi Gras.
40 pages, 8 1/2 X 11. **$11.95.**

LOUISIANA HAYRIDE

Harnett T. Kane, Forward by Sam H. Jones
One of the most sought-after books on Louisiana, this volume documents the rise to power, the political maneuverings, and the assassination of Louisiana's Kingfish, Huey Long.
484 pages, 5 1/2 X 8 1/2. **$10.95.**

LOUISIANA PLANTATION HOMES: A RETURN TO SPLENDOR

Lee Malone, Photographs by Paul Malone
The antebellum South is celebrated in this beautiful book featuring over 100 full-color photographs of 76 restored plantation homes. Full-page photographs are accompanied by text highlighting the history and architectural features of each home.
160 pages, 14 5/16 X 10 1/8. **$34.95.**

THE FRANK DAVIS SEAFOOD NOTEBOOK

Frank Davis, Foreword by Paul Prudhomme
Davis shares hundreds of mouth watering recipes for original specialities and traditional Cajun, Creole and Italian favorites. He begins with a detailed discussion of basic ingredients and spices, then suggests tips on proper handling of seafood, whether you hook it yourself or catch it in the store. In the fish section, more than 245 species of edible fish caught in U.S. waters are rated and evaluated.
288 pages, 6 X 9. **$14.95.**

CLOVIS CRAWFISH AND HIS FRIENDS

Mary Alice Fontenot, Illustrated by Keith Graves
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Bayou Kitchen

by Wayne Miller

Illustration courtesy of La. Seafood Promotion and Marketing Board

Photography by Ken Glaser

Black Drum With 3 Peppers

1 1/2 pounds fresh black drum fillets
2 tablespoons light olive oil
salt and pepper to taste
2 tablespoons additional oil
1 small green pepper cut into thin strips
1 small red pepper cut into thin strips
1 small yellow or orange pepper cut into thin strips
1/2 pound thickly sliced fresh mushrooms
1/2 tablespoon freshly chopped basil (or 1 teaspoon dried)
1 small jalapeno pepper finely minced (seeds removed)

Preheat the broiler. Rinse fish under cold water. Pat very dry. Brush lightly with olive oil. Season to taste. Broil fish 4 to 5 inches from heat source 6 to 12 minutes per inch thickness until the fish is just opaque throughout. While the fish is broiling, heat the additional oil in a large saute pan over medium-high heat. Add the remaining ingredients to the pan. Throughly blend and stir for 3 to 4 minutes until vegetables are heated through, but still firm in texture.

Portion fish on individual warm plates. Top each portion with sauteed vegetable mixture. Serve immediately. Serves 4.

Microwaved Black Drum

(Italian Style)

2 large tomatoes diced
1 teaspoon basil leaves
1/2 teaspoon oregano leaves
2 cloves garlic finely minced
salt and pepper to taste
1 1/2 pounds fresh black drum fillets

Mix tomatoes, oregano, garlic, salt and pepper in a 4 cup mixing bowl. Microwave uncovered on high 4 to 5 minutes. Keep warm.

Rinse fillets under cold water. Pat dry. Place fillets in shallow microwave baking dish, thicker portion to outside. Cover with plastic wrap, vented. Microwave on high 3 to 6 minutes until fish is slightly translucent in the center, turning dish every 2 minutes. Allow fish to stand, covered, 3 to 5 minutes to complete cooking. Drain. Top fillets with sauce. Serves 4.

Black Drum Au Gratin

1 1/2 pounds fresh black drum fillets
salt and pepper to taste
3 teaspoons oregano (or herbs of your choice)
6 tablespoons light olive oil
1 cup bread crumbs

Preheat oven to 425 degrees. Rinse fish under cold running water. Dry. Season fish on both sides. Place into a lightly greased (or use a non stick product) baking dish, skin side down. Throughly mix oregano with oil and bread crumbs. Spread crumb mixture evenly over surface of fish. Bake fish 6 to 12 minutes per inch thickness until fish is just opaque throughout. Remove fish from oven and place it under the broiler for 1 minute to brown the crumb covering. Serves 4.

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